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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,630	01/15/2004	Yoshikazu Banno	03500.011080.9	4865

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EXAMINER	
TALBOT, BRIAN K	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/757,630	BANNO ET AL.	
	Examiner	Art Unit	
	Brian K. Talbot	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *38-69* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *38-69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/24/05 has been entered.

2. Claims 1-37 have been canceled. Claims 46-69 have been added. Claims 38-69 remain in the application.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. The ODP over Mishima et al. (6,815,001) has been withdrawn.

Claim Rejections - 35 USC § 112

5. Claims 38-53 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed

invention. The Examiner can't find out where in the specification the support for "the detecting step being performed while moving". It is noted that on pg. 32, lines 9-25, the supplying means can be in motion, but no reference to the detecting means is recited.

6. Claims 41 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 41 and 44, the term "condition" is vague and indefinite. It is unclear what "condition" is being referred to. In addition, the claim is indefinite because the claim includes elements not actually disclosed (those encompassed by "condition", thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

With respect to claims 38-49 and 54-65, the claims recite forming device, however, no film forming step for producing the device is claimed. Clarification is requested (see claim 50 which recites "a step of forming a member constituting a electronic device".

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 38-69 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 32 of U.S. Patent No. 6,060,113 (alone) or in combination with Suzuki et al. (4,954,744). Although the conflicting claims are not identical, they are not patentably distinct from each other because both claims are directed to detecting and controlling a dispensing device for droplets to form an electron-emitting device. The claims recite detecting similar "conditions" in the dispensing process including the substrate location, area to be coated, material dispensed, etc. The difference lies in the fact that the instant claims recite detecting/supplying while/by in motion.

It is noted, that the droplet of U.S. Patent No. 6,060,113 contains a solvent (specification pg. 9, lines 1-5). Also, the term "processing step ..to form the device" is a heating step which would evaporate the solvent therein (specification, pg. 25, lines 20-25).

With respect to including a solvent and an evaporating step for producing electron emitting devices, Suzuki et al. (4,954,744) teaches such detailed below.

Hence, this is an obvious modification of the art.

Claim Rejections - 35 USC § 103

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 38-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (3,611,077) in combination Smith (3,611,077) in combination Suzuki et al. (4,954,744) in combination with JP 63-200041 or Maiorca et al. (5,052,338).

Smith (3,611,077) teaches a thin-film electron emitter where two electrodes are spaced apart from each other on a silicon substrate. An electron emitting film is applied between the two electrodes by a droplet deposition technique. The droplets can be a semiconductive material, a metallic material or a combination thereof.

Suzuki et al. (4,954,744) teaches an electron-emitting device comprising two electrodes spaced apart from each other and a conductive film being applied to connect the electrodes. The conductive film can be applied by a dispersion including the conductive material and a solvent and then heated to remove the solvent (col. 6, line 60 – col. 7, line 10).

Therefore it would have been obvious at the time the invention was made to have modified Smith (3,611,077) process by including a solvent and evaporating step as evidenced by Suzuki et al. (4,954,744) or to have modified Suzuki et al. (4,954,744) process by deposition the electron conductive film by a droplet deposition step as evidenced by Smith (3,611,077) with the expectation of achieving similar success.

Smith (3,611,077) in combination Suzuki et al. (4,954,744) fail to teach a detecting means for detecting a position on the substrate for the coating material and detecting a state of the droplet supplied.

JP 63-200041 teaches a droplet supplying means (12) for ejecting a droplet (13) of circuit forming material on an IC substrate. A detection means (15) for detecting the state of the supplied droplet (13) and a control means (19) for controlling the operation of the droplet supplying means (12) on the basis of the state of the supplied droplet (13) obtained by the detection means (15).

"A hybrid IC substrate 9 and a liquid droplet emitter 12 emitting the liquid droplet of an ink solution containing a circuit element forming part are relatively moved and a liquid droplet emitting apparatus 1 is subjected to emitting operation during the relative movement to draw a desired circuit pattern on the substrate 9."

Maiorca et al. (5,052,338) teaches an apparatus for dispensing viscous materials a constant height above a workpiece. A camera above the workpiece sends output signals of the image of a workpiece and height of the syringe for dispensing the material from the substrate. The syringe can be moved vertically or horizontally depending upon the reading of the camera (abstract).

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified Smith (3,611,077) in combination Suzuki et al. (4,954,744) process by incorporating a detection means as evidenced by JP 63-200041or Maiorca et al. (5,052,338) with the advantages associated with a monitoring device.

In addition, it has been well settled that the provision of mechanical or automated means to replace manual activity is held to have been obvious (In re Venner 120 USPQ 192). In this case the manual means for visualizing the workpiece and the area to be coated is replaced by automated means such as a camera.

Response to Amendment

10. Applicant's arguments filed 10/24/05 have been fully considered but they are not persuasive.

Applicant argued that the prior art fails to teach detecting/dispensing during movement of the detector/dispenser.

The Examiner disagrees. As detailed above, A hybrid IC substrate 9 and a liquid droplet emitter 12 emitting the liquid droplet of an ink solution containing a circuit element forming part are relatively moved and a liquid droplet emitting apparatus 1 is subjected to emitting operation during the relative movement to draw a desired circuit pattern on the substrate 9.

Applicant argued that the 35 USC 112 first paragraph rejection should be withdrawn as the Figs. 19A,19B,20A and 20B as well as the corresponding description beginning on pg. 33, line 20.

The Examiner disagrees. The figures as well as the description do not positively recite or suggest that the detecting means is in motion while performing the detecting step. It recites that the detecting means is moved, but not during/while the step is being performed. Hence, the rejection is maintained.

Applicant argued that the 35 USC 112 second paragraph rejection concerning claims 41 and 44 with regards to the term "attributes" should be withdraw as the term is canceled.

The Examiner agrees. However, the replacement term "condition" also is indefinite because the claim includes elements not actually disclosed (those encompassed by "condition", thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Applicant argued that the ODP rejection should be withdrawn since the '113 reference does not teach a solvent in the droplet as well as an evaporating step.

This is addressed above in section (7).

Applicant argue that the prior art fails to teach a solvent or dispersion medium comprising the liquid droplet and evaporating this solvent or forming the film by heating.

Suzuki et al. (4,954,744) teaches this limitation as detailed above.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B K Talbot 1/7/06

Brian K Talbot
Primary Examiner
Art Unit 1762

BKT